

Applic. No.: 09/939,330
Amdt. Dated May 31, 2006
Reply to Office action of March 21, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1 (currently amended): A method of producing a crystalline solid-state layer by chemical vapor deposition, which comprises:

providing a reactor chamber with an interior space and a reactor wall having a first side an upper wall formed with inlet openings communicating with the interior space and a second side, a lower wall, a left side wall, and a right side wall;

mounting a substrate having a surface at the second-side lower wall of the reactor wall in the interior space of the reactor chamber;

providing a distributor plate in the interior space of the reactor chamber by mounting the distributor plate on the left side wall of the reactor wall and on the right side wall of the reactor wall so that the distributor plate horizontally extends from the left side wall to the right side wall, and

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setting a distance between the distributor plate and the substrate surface of less than 2cm;

performing chemical vapor deposition by introducing into the interior space starting gases containing elements of a solid-state layer to be deposited on the surface of the substrate and at least one auxiliary substance through the inlet openings;

providing the auxiliary substance in a form containing molecules having a dipole moment and a property of briefly attaching themselves, during a deposition process, to the surface of the substrate with a dipole moment perpendicular to the surface of the substrate in order to dictate a crystal structure of the solid-state layer;

providing the reactor chamber with a first gas outlet;

pumping away a first part of reaction products through the first gas outlet;

providing the reactor chamber with a second gas outlet opening formed in the reactor wall downstream of the substrate;

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~~providing a connecting line connecting the second gas outlet opening to one of the inlet openings located upstream of the distributor plate for feeding a second part of the reaction products back to the one of the inlet openings, and~~

~~configuring, in the connecting line, a valve for controlling gas flow, the valve having an inlet and an outlet, the second gas outlet opening being directly connected to the inlet of the valve and the outlet of the valve being directly connected to the one of the inlet openings located upstream of the distributor plate.~~

Claim 2 (previously presented): The method according to claim 1, wherein the step of introducing the auxiliary substance includes feeding the auxiliary substance into the interior space from an external supply source.

Claim 3 (original): The method according to claim 2, which comprises providing the external supply source as a storage container.

Claim 4 (previously presented): The method according to claim 1, which comprises:

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providing the auxiliary substance substantially from reaction products being pumped away from the interior space during the chemical vapor deposition.

Claim 5 (original): The method according to claim 1, which comprises providing the solid-state layer as a layer selected from the group consisting of a ferroelectric layer and a paraelectric layer.

Claim 6 (previously presented): The method according to claim 5, which comprises providing the solid-state layer with a Perovskite structure.

Claim 7 (previously presented): The method according to claim 1, which comprises:

setting the distance between the distributor plate and the substrate preferably at approximately 1 cm.

Claim 8 (previously presented): The method according to claim 1, which comprises providing the distributor plate as a perforated plate.

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Claim 9 (previously presented): The method according to claim 1, which comprises introducing a carrier gas through the inlet openings.

Claims 10-12 (cancelled).